



## SEQUENCE LISTING

Kopin, Alan S.  
Beinborn, Martin

<120> Constitutively Active, Hypersensitive,  
and Nonfunctional Receptors as Novel Therapeutic Agents

<130> 00398/510002

<140> US 10/039,645

<141> 2001-10-25

<150> US 60/243,550

<151> 2000-10-26

<160> 87

<170> FastSEQ for Windows Version 4.0

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Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp
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Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala
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 50 55 60  
 Val Phe Val Val Gly Leu Val Gly Asn Ser Leu Val Met Phe Val Ile  
 65 70 75 80  
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 85 90 95  
 Leu Ala Leu Ala Asp Ala Leu Val Thr Thr Thr Met Pro Phe Gln Ser  
 100 105 110  
 Thr Val Tyr Leu Met Asn Ser Trp Pro Phe Gly Asp Val Leu Cys Lys  
 115 120 125  
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 130 135 140  
 Leu Thr Met Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val  
 145 150 155 160  
 Lys Ala Leu Asp Phe Arg Thr Pro Leu Lys Ala Lys Ile Ile Asn Ile  
 165 170 175  
 Cys Ile Trp Leu Leu Ser Ser Ser Val Gly Ile Ser Ala Ile Val Leu  
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 Gly Gly Thr Lys Val Arg Glu Asp Val Asp Val Ile Glu Cys Ser Leu  
 195 200 205  
 Gln Phe Pro Asp Asp Asp Tyr Ser Trp Trp Asp Leu Phe Met Lys Ile  
 210 215 220  
 Cys Val Phe Ile Phe Ala Phe Val Ile Pro Val Leu Ile Ile Ile Val  
 225 230 235 240  
 Cys Tyr Thr Leu Met Ile Leu Arg Leu Lys Ser Val Arg Leu Leu Ser  
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Met	Phe	Val	Ile	Ile	Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile
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Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala	Asp	Ala	Leu	Val	Thr	Thr	Thr	Met
			100					105					110		
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Val	Leu	Cys	Lys	Ile	Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr
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Cys	His	Pro	Val	Lys	Ala	Leu	Asp	Phe	Arg	Thr	Pro	Leu	Lys	Ala	Lys
				165					170					175	
Ile	Ile	Asn	Ile	Cys	Ile	Trp	Ile	Leu	Ala	Ser	Ser	Val	Gly	Ile	Ser
		180						185					190		
Ala	Ile	Val	Leu	Gly	Gly	Thr	Lys	Val	Arg	Glu	Asp	Val	Asp	Val	Ile
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Glu	Cys	Ser	Leu	Gln	Phe	Pro	Asp	Asp	Glu	Tyr	Ser	Trp	Trp	Asp	Leu
	210					215					220				
Phe	Met	Lys	Ile	Cys	Val	Phe	Val	Phe	Ala	Phe	Val	Ile	Pro	Val	Leu
225					230				235					240	
Ile	Ile	Ile	Val	Cys	Tyr	Thr	Leu	Met	Ile	Leu	Arg	Leu	Lys	Ser	Val
				245					250					255	
Arg	Leu	Leu	Ser	Gly	Ser	Arg	Glu	Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile
			260					265					270		



Thr	Lys	Ile	Val	Leu	Val	Val	Val	Ala	Val	Phe	Ile	Ile	Cys	Trp	Thr
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Pro	Ile	His	Ile	Phe	Ile	Leu	Val	Glu	Ala	Leu	Gly	Ser	Thr	Ser	His
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Asn	Leu	Ser	His	Leu	Asp	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Gly	Pro	Asn
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Arg	Thr	Asp	Leu	Gly	Gly	Arg	Asp	Ser	Leu	Cys	Pro	Pro	Thr	Gly	Ser
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Pro	Ser	Met	Ile	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val
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Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val
			85					90					95		
Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu
		100					105						110		
Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val
	115						120					125			
Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile
130					135						140				
Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu
145				150					155						160
Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys
			165					170						175	
Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val	Cys
	180						185						190		
Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Ile	Pro	Val	Met	Phe	Met	Ala
195						200						205			
Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser
210					215						220				
His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Asp	Lys	Ile	Cys	Val	Phe	Ile
225				230					235					240	
Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu
		245						250						255	
Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu
	260						265					270			
Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val
	275						280					285			

Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile
	290					295					300				
Lys	Ala	Leu	Val	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser	Trp
305					310					315					320
His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val
				325					330					335	
Leu	Tyr	Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe
			340					345					350		
Cys	Ile	Pro	Thr	Ser	Ser	Asn	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Ile
		355					360					365			
Arg	Gln	Asn	Thr	Arg	Asp	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg
	370					375					380				
Thr	Asn	His	Gln	Leu	Glu	Asn	Leu	Glu	Ala	Glu	Thr	Ala	Pro	Leu	Pro
385					390					395					400

<210> 79  
 <211> 398  
 <212> PRT  
 <213> Homo sapiens

<400> 79															
Met	Asp	Ser	Ser	Thr	Gly	Pro	Gly	Asn	Thr	Ser	Asp	Cys	Ser	Asp	Pro
1				5					10					15	
Leu	Ala	Gln	Ala	Ser	Cys	Ser	Pro	Ala	Pro	Gly	Ser	Trp	Leu	Asn	Leu
			20					25					30		
Ser	His	Val	Asp	Gly	Asn	Gln	Ser	Asp	Pro	Cys	Gly	Leu	Asn	Arg	Thr
	35					40					45				
Gly	Leu	Gly	Gly	Asn	Asp	Ser	Leu	Cys	Pro	Gln	Thr	Gly	Ser	Pro	Ser
50				55						60					
Met	Val	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile	Val	Cys	Val
65				70					75					80	
Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	Arg	Tyr
			85					90					95		
Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu
		100					105						110		
Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Val	Asn	Tyr
	115						120					125			
Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	Val	Ile
130						135					140				
Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Cys	Thr
145					150				155					160	
Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu
			165					170					175		
Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp
		180					185					190			
Ile	Leu	Ser	Ser	Ala	Ile	Gly	Ile	Pro	Val	Met	Phe	Met	Ala	Thr	Thr
	195						200					205			
Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys	Thr	Leu	Thr	Phe	Ser	His	Pro
210						215					220				
Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala
225				230					235						240
Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Ile
			245					250					255		
Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp
		260					265					270			
Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Ala	Val	
	275						280					285			

Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile	Ile	Lys	Ala
290						295					300				
Leu	Ile	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser	Trp	His	Phe
305					310					315					320
Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val	Leu	Tyr
				325					330					335	
Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe	Cys	Ile
			340					345					350		
Pro	Thr	Ser	Ser	Thr	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Val	Arg	Gln
		355					360					365			
Asn	Thr	Arg	Glu	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg	Thr	Asn
	370					375					380				
His	Gln	Leu	Glu	Asn	Leu	Glu	Ala	Glu	Thr	Ala	Pro	Leu	Pro		
385					390					395					

<210> 80  
 <211> 372  
 <212> PRT  
 <213> Homo sapiens

<400> 80															
Met	Glu	Pro	Ala	Pro	Ser	Ala	Gly	Ala	Glu	Leu	Gln	Pro	Pro	Leu	Phe
1				5					10					15	
Ala	Asn	Ala	Ser	Asp	Ala	Tyr	Pro	Ser	Ala	Cys	Pro	Ser	Ala	Gly	Ala
			20					25					30		
Asn	Ala	Ser	Gly	Pro	Pro	Gly	Ala	Arg	Ser	Ala	Ser	Ser	Leu	Ala	Leu
		35					40					45			
Ala	Ile	Ala	Ile	Thr	Ala	Leu	Tyr	Ser	Ala	Val	Cys	Ala	Val	Gly	Leu
	50					55					60				
Leu	Gly	Asn	Val	Leu	Val	Met	Phe	Gly	Ile	Val	Arg	Tyr	Thr	Lys	Met
65					70					75					80
Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala	Asp	Ala
				85					90					95	
Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser	Ala	Lys	Tyr	Leu	Met	Glu
			100					105					110		
Thr	Trp	Pro	Phe	Gly	Glu	Leu	Leu	Cys	Lys	Ala	Val	Ile	Ser	Ile	Asp
		115					120					125			
Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Thr	Met	Met	Ser	Val
	130					135					140				
Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu	Asp	Phe	Arg
145					150					155					160
Thr	Pro	Ala	Lys	Ala	Lys	Ile	Ile	Asn	Ile	Cys	Ile	Trp	Val	Leu	Ala
				165					170					175	
Ser	Gly	Val	Gly	Val	Pro	Ile	Met	Val	Met	Ala	Val	Thr	Arg	Pro	Arg
			180					185				190			
Asp	Gly	Ala	Val	Val	Cys	Met	Leu	Gln	Phe	Pro	Ser	Pro	Ser	Trp	Tyr
		195					200					205			
Trp	Asp	Thr	Val	Thr	Lys	Ile	Cys	Val	Phe	Leu	Phe	Ala	Phe	Val	Val
	210					215					220				
Pro	Ile	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Leu	Leu	Arg	Leu
225					230					235					240
Arg	Ser	Val	Arg	Leu	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp	Arg	Ser	Leu
				245					250					255	
Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	Gly	Ala	Phe	Val	Val
			260					265				270			
Cys	Trp	Ala	Pro	Ile	His	Ile	Phe	Val	Ile	Val	Trp	Thr	Leu	Val	Asp
		275					280					285			

Ile	Asp	Arg	Arg	Asp	Pro	Leu	Val	Val	Ala	Ala	Leu	His	Leu	Cys	Ile
290						295					300				
Ala	Leu	Gly	Tyr	Ala	Asn	Ser	Ser	Leu	Asn	Pro	Val	Leu	Tyr	Ala	Phe
305					310					315					320
Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Gln	Leu	Cys	Arg	Lys	Pro
				325					330					335	
Cys	Gly	Arg	Pro	Asp	Pro	Ser	Ser	Phe	Ser	Arg	Ala	Arg	Glu	Ala	Thr
			340					345					350		
Ala	Arg	Glu	Arg	Val	Thr	Ala	Cys	Thr	Pro	Ser	Asp	Gly	Pro	Gly	Gly
		355					360					365			
Gly	Ala	Ala	Ala												
370															

<210> 81  
 <211> 359  
 <212> PRT  
 <213> Homo sapiens

<400> 81															
Met	Ala	Leu	Asn	Ser	Ser	Ala	Glu	Asp	Gly	Ile	Lys	Arg	Ile	Gln	Asp
1				5					10					15	
Asp	Cys	Pro	Lys	Ala	Gly	Arg	His	Ser	Tyr	Ile	Phe	Val	Met	Ile	Pro
			20					25					30		
Thr	Leu	Tyr	Ser	Ile	Ile	Phe	Val	Val	Gly	Ile	Phe	Gly	Asn	Ser	Leu
		35				40						45			
Val	Val	Ile	Val	Ile	Tyr	Phe	Tyr	Met	Lys	Leu	Lys	Thr	Val	Ala	Ser
	50					55					60				
Val	Phe	Leu	Leu	Asn	Leu	Ala	Leu	Ala	Asp	Leu	Cys	Phe	Leu	Leu	Thr
65				70					75						80
Leu	Pro	Leu	Trp	Ala	Val	Tyr	Thr	Ala	Met	Glu	Tyr	Arg	Trp	Pro	Phe
			85						90					95	
Gly	Asn	His	Leu	Cys	Lys	Ile	Ala	Ser	Ala	Ser	Val	Thr	Glu	Asn	Leu
			100					105					110		
Tyr	Ala	Ser	Val	Phe	Leu	Leu	Thr	Cys	Leu	Ser	Ile	Asp	Arg	Tyr	Leu
	115						120					125			
Ala	Ile	Val	His	Pro	Met	Lys	Ser	Arg	Leu	Arg	Arg	Thr	Met	Leu	Val
	130					135						140			
Ala	Lys	Val	Thr	Cys	Ile	Ile	Trp	Leu	Met	Ala	Gly	Leu	Ala	Ser	
145				150					155					160	
Leu	Pro	Ala	Val	Ile	His	Arg	Asn	Val	Tyr	Phe	Ile	Glu	Asn	Thr	Asn
			165						170					175	
Ile	Thr	Val	Cys	Ala	Phe	His	Tyr	Glu	Ser	Arg	Asn	Ser	Thr	Leu	Pro
		180					185						190		
Ile	Gly	Leu	Gly	Leu	Thr	Lys	Asn	Ile	Leu	Gly	Phe	Leu	Phe	Pro	Phe
	195					200						205			
Leu	Ile	Ile	Ile	Thr	Ser	Tyr	Thr	Leu	Ile	Trp	Lys	Ala	Leu	Lys	Lys
	210					215					220				
Ala	Tyr	Glu	Ile	Gln	Lys	Asn	Lys	Pro	Arg	Asn	Asp	Asp	Ile	Phe	Arg
225				230						235					240
Ile	Ile	Met	Ala	Ile	Val	Leu	Phe	Phe	Phe	Phe	Ser	Trp	Val	Pro	His
			245						250					255	
Gln	Ile	Phe	Thr	Phe	Leu	Asp	Val	Leu	Ile	Gln	Leu	Gly	Val	Ile	His
		260						265					270		
Asp	Cys	Lys	Ile	Ser	Asp	Ile	Val	Asp	Thr	Ala	Met	Pro	Ile	Thr	Ile
	275						280					285			
Cys	Ile	Ala	Tyr	Phe	Asn	Asn	Cys	Leu	Asn	Pro	Leu	Phe	Tyr	Gly	Phe
	290					295					300				

Leu	Gly	Lys	Lys	Phe	Lys	Lys	Tyr	Phe	Leu	Gln	Leu	Leu	Lys	Tyr	Ile
305					310					315					320
Pro	Pro	Lys	Ala	Lys	Ser	His	Ser	Ser	Leu	Ser	Thr	Lys	Met	Ser	Thr
				325					330					335	
Leu	Ser	Tyr	Arg	Pro	Ser	Asp	Asn	Met	Ser	Ser	Ser	Ala	Lys	Lys	Pro
			340					345					350		
Ala	Ser	Cys	Phe	Glu	Val	Glu									
		355													

<210> 82  
 <211> 391  
 <212> PRT  
 <213> Homo sapiens

<400> 82															
Met	Phe	Ser	Pro	Trp	Lys	Ile	Ser	Met	Phe	Leu	Ser	Val	Arg	Glu	Asp
1				5					10					15	
Ser	Val	Pro	Thr	Thr	Ala	Ser	Phe	Ser	Ala	Asp	Met	Leu	Asn	Val	Thr
			20					25					30		
Leu	Gln	Gly	Pro	Thr	Leu	Asn	Gly	Thr	Phe	Ala	Gln	Ser	Lys	Cys	Pro
		35					40					45			
Gln	Val	Glu	Trp	Leu	Gly	Trp	Leu	Asn	Thr	Ile	Gln	Pro	Pro	Phe	Leu
	50					55					60				
Trp	Val	Ile	Phe	Val	Leu	Ala	Thr	Leu	Glu	Asn	Ile	Phe	Val	Leu	Ser
65					70				75						80
Val	Phe	Cys	Leu	His	Lys	Ser	Ser	Cys	Thr	Val	Ala	Glu	Ile	Tyr	Leu
				85					90					95	
Gly	Asn	Leu	Ala	Ala	Ala	Asp	Leu	Ile	Leu	Ala	Cys	Gly	Leu	Pro	Phe
			100					105					110		
Trp	Ala	Ile	Thr	Ile	Ser	Asn	Asn	Phe	Asp	Trp	Leu	Phe	Gly	Glu	Thr
		115				120						125			
Leu	Cys	Arg	Val	Val	Asn	Ala	Ile	Ile	Ser	Met	Asn	Leu	Tyr	Ser	Ser
		130				135					140				
Ile	Cys	Phe	Leu	Met	Leu	Val	Ser	Ile	Asp	Arg	Tyr	Leu	Ala	Leu	Val
145					150					155					160
Lys	Thr	Met	Ser	Met	Gly	Arg	Met	Arg	Gly	Val	Arg	Trp	Ala	Lys	Leu
				165					170					175	
Tyr	Ser	Leu	Val	Ile	Trp	Gly	Cys	Thr	Leu	Leu	Leu	Ser	Ser	Pro	Met
			180					185					190		
Leu	Val	Phe	Arg	Thr	Met	Lys	Glu	Tyr	Ser	Asp	Glu	Gly	His	Asn	Val
			195				200					205			
Thr	Ala	Cys	Val	Ile	Ser	Tyr	Pro	Ser	Leu	Ile	Trp	Glu	Val	Phe	Thr
	210					215					220				
Asn	Met	Leu	Leu	Asn	Val	Val	Gly	Phe	Leu	Leu	Pro	Leu	Ser	Val	Ile
225				230						235					240
Thr	Phe	Cys	Thr	Met	Gln	Ile	Met	Gln	Val	Leu	Arg	Asn	Asn	Glu	Met
				245					250					255	
Gln	Lys	Phe	Lys	Glu	Ile	Gln	Thr	Glu	Arg	Arg	Ala	Thr	Val	Leu	Val
			260					265					270		
Leu	Val	Val	Leu	Leu	Leu	Phe	Ile	Ile	Cys	Trp	Leu	Pro	Phe	Gln	Ile
		275					280					285			
Ser	Thr	Phe	Leu	Asp	Thr	Leu	His	Arg	Leu	Gly	Ile	Leu	Ser	Ser	Cys
	290					295					300				
Gln	Asp	Glu	Arg	Ile	Ile	Asp	Val	Ile	Thr	Gln	Ile	Ala	Ser	Phe	Met
305					310					315					320
Ala	Tyr	Ser	Asn	Ser	Cys	Leu	Asn	Pro	Leu	Val	Tyr	Val	Ile	Val	Gly
				325					330					335	

Lys Arg Phe Arg Lys Lys Ser Trp Glu Val Tyr Gln Gly Val Cys Gln  
                   340                  345                  350  
 Lys Gly Gly Cys Arg Ser Glu Pro Ile Gln Met Glu Asn Ser Met Gly  
                   355                  360                  365  
 Thr Leu Arg Thr Ser Ile Ser Val Glu Arg Gln Ile His Lys Leu Gln  
                   370                  375                  380  
 Asp Trp Ala Gly Ser Arg Gln  
 385                  390

<210> 83  
 <211> 398  
 <212> PRT  
 <213> Homo sapiens

<400> 83  
 Met Asp Ser Ser Ala Gly Pro Gly Asn Ile Ser Asp Cys Ser Asp Pro  
   1                  5                  10                  15  
 Leu Ala Pro Ala Ser Cys Ser Pro Ala Pro Gly Ser Trp Leu Asn Leu  
                   20                  25                  30  
 Ser His Val Asp Gly Asn Gln Ser Asp Pro Cys Gly Pro Asn Arg Thr  
                   35                  40                  45  
 Gly Leu Gly Gly Ser His Ser Leu Cys Pro Gln Thr Gly Ser Pro Ser  
                   50                  55                  60  
 Met Val Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val Cys Val  
 65                  70                  75                  80  
 Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val Arg Tyr  
                   85                  90                  95  
 Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu Ala Leu  
                   100                  105                  110  
 Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val Asn Tyr  
                   115                  120                  125  
 Leu Met Gly Thr Trp Pro Phe Gly Asn Ile Leu Cys Lys Ile Val Ile  
                   130                  135                  140  
 Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu Cys Thr  
 145                  150                  155                  160  
 Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys Ala Leu  
                   165                  170                  175  
 Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Val Asn Val Cys Asn Trp  
                   180                  185                  190  
 Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala Thr Thr  
                   195                  200                  205  
 Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser His Pro  
                   210                  215                  220  
 Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile Phe Ala  
 225                  230                  235                  240  
 Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu Met Ile  
                   245                  250                  255  
 Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu Lys Asp  
                   260                  265                  270  
 Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Ala Val  
                   275                  280                  285  
 Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile Lys Ala  
                   290                  295                  300  
 Leu Ile Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp His Phe  
 305                  310                  315                  320  
 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Tyr  
                   325                  330                  335

Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe	Cys	Ile
			340					345					350		
Pro	Thr	Ser	Ser	Thr	Ile	Glu	Gln	Gln	Asn	Ser	Ala	Arg	Ile	Arg	Gln
		355					360					365			
Asn	Thr	Arg	Glu	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg	Thr	Asn
	370					375					380				
His	Gln	Leu	Glu	Asn	Leu	Glu	Ala	Glu	Thr	Ala	Pro	Leu	Pro		
385					390					395					

<210> 84  
 <211> 405  
 <212> PRT  
 <213> Homo sapiens

<400> 84															
Met	Asp	Ser	Gly	Ala	Val	Pro	Thr	Asn	Ala	Ser	Asn	Cys	Ile	Asp	Pro
1				5					10					15	
Phe	Thr	His	Pro	Ser	Ser	Cys	Ser	Pro	Ala	Pro	Ser	Pro	Ser	Ser	Trp
			20					25					30		
Val	Asn	Phe	Ser	His	Leu	Glu	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Gly	Pro
		35					40					45			
Asn	Arg	Thr	Glu	Leu	Gly	Gly	Ser	Asp	Arg	Leu	Cys	Pro	Ser	Ala	Gly
	50					55					60				
Ser	Pro	Ser	Met	Ile	Thr	Ala	Met	Val	Thr	Ala	Ile	Ile	Ile	Met	Ala
65				70					75					80	
Leu	Tyr	Ser	Ile	Val	Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val
			85					90					95		
Met	Tyr	Val	Ile	Val	Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile
		100						105					110		
Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu
	115						120					125			
Pro	Phe	Gln	Ser	Val	Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr
	130					135					140				
Ile	Leu	Cys	Lys	Ile	Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr
145				150					155					160	
Ser	Ile	Phe	Thr	Leu	Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val
			165					170					175		
Cys	His	Pro	Val	Lys	Ala	Leu	Asp	Leu	Arg	Thr	Pro	Arg	Asn	Ala	Lys
		180						185					190		
Ile	Ile	Asn	Ile	Cys	Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro
		195				200						205			
Val	Met	Phe	Met	Ala	Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	Asp	Cys
	210					215					220				
Thr	Leu	Thr	Phe	Ser	His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys
225				230					235					240	
Ile	Cys	Val	Phe	Ile	Phe	Ala	Phe	Ile	Met	Pro	Ile	Leu	Ile	Ile	Thr
			245					250					255		
Val	Cys	Tyr	Gly	Leu	Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu
		260					265					270			
Ser	Gly	Ser	Lys	Glu	Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met
	275					280						285			
Val	Leu	Val	Val	Val	Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His
	290				295					300					
Ile	Tyr	Val	Ile	Ile	Lys	Ala	Leu	Ile	Thr	Ile	Pro	Glu	Thr	Thr	Phe
305					310				315						320
Gln	Thr	Val	Ser	Trp	His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser
			325					330						335	

Cys Leu Asn Pro Val Leu Tyr Ala Phe Leu Asp Glu Asn Phe Lys Arg  
                   340                  345                  350  
 Cys Phe Arg Glu Phe Cys Ile Pro Thr Ser Ser Thr Ile Glu Gln Gln  
                   355                  360                  365  
 Asn Ser Thr Arg Ile Arg Gln Asn Thr Arg Asp His Pro Ser Thr Ala  
                   370                  375                  380  
 Asn Thr Val Asp Arg Thr Asn His Gln Leu Glu Asn Leu Glu Ala Glu  
 385                  390                  395                  400  
 Thr Thr Pro Leu Pro  
                   405

<210> 85  
 <211> 400  
 <212> PRT  
 <213> Homo sapiens

<400> 85  
 Met Asp Ser Ser Ala Ala Pro Thr Asn Ala Ser Asn Cys Thr Asp Ala  
 1                  5                  10                  15  
 Leu Ala Tyr Ser Ser Cys Ser Pro Ala Pro Ser Pro Gly Ser Trp Val  
                   20                  25                  30  
 Asn Leu Ser His Leu Asp Gly Asn Leu Ser Asp Pro Cys Gly Pro Asn  
                   35                  40                  45  
 Arg Thr Asp Leu Gly Gly Arg Asp Ser Leu Cys Pro Pro Thr Gly Ser  
                   50                  55                  60  
 Pro Ser Met Ile Thr Ala Ile Thr Ile Met Ala Leu Tyr Ser Ile Val  
 65                  70                  75                  80  
 Cys Val Val Gly Leu Phe Gly Asn Phe Leu Val Met Tyr Val Ile Val  
                   85                  90                  95  
 Arg Tyr Thr Lys Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu  
                   100                  105                  110  
 Ala Leu Ala Asp Ala Leu Ala Thr Ser Thr Leu Pro Phe Gln Ser Val  
                   115                  120                  125  
 Asn Tyr Leu Met Gly Thr Trp Pro Phe Gly Thr Ile Leu Cys Lys Ile  
                   130                  135                  140  
 Val Ile Ser Ile Asp Tyr Tyr Asn Met Phe Thr Ser Ile Phe Thr Leu  
 145                  150                  155                  160  
 Cys Thr Met Ser Val Asp Arg Tyr Ile Ala Val Cys His Pro Val Lys  
                   165                  170                  175  
 Ala Leu Asp Phe Arg Thr Pro Arg Asn Ala Lys Ile Ile Asn Val Cys  
                   180                  185                  190  
 Asn Trp Ile Leu Ser Ser Ala Ile Gly Leu Pro Val Met Phe Met Ala  
                   195                  200                  205  
 Thr Thr Lys Tyr Arg Gln Gly Ser Ile Asp Cys Thr Leu Thr Phe Ser  
                   210                  215                  220  
 His Pro Thr Trp Tyr Trp Glu Asn Leu Leu Lys Ile Cys Val Phe Ile  
 225                  230                  235                  240  
 Phe Ala Phe Ile Met Pro Val Leu Ile Ile Thr Val Cys Tyr Gly Leu  
                   245                  250                  255  
 Met Ile Leu Arg Leu Lys Ser Val Arg Met Leu Ser Gly Ser Lys Glu  
                   260                  265                  270  
 Lys Asp Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val  
                   275                  280                  285  
 Ala Val Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile  
                   290                  295                  300  
 Lys Ala Leu Val Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp  
 305                  310                  315                  320



His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val
				325					330					335	
Leu	Tyr	Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe
			340					345					350		
Cys	Ile	Pro	Thr	Ser	Ser	Asn	Ile	Glu	Gln	Gln	Asn	Ser	Thr	Arg	Ile
		355					360					365			
Arg	Gln	Asn	Thr	Arg	Asp	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg
	370					375					380				
Thr	Asn	His	Gln	Leu	Glu	Asn	Leu	Glu	Ala	Glu	Thr	Ala	Pro	Leu	Pro
385					390					395					400

<210> 86  
 <211> 400  
 <212> PRT  
 <213> Homo sapiens

<400> 86

Met	Asp	Ser	Ser	Ala	Asp	Pro	Arg	Asn	Ala	Ser	Asn	Cys	Thr	Asp	Pro
1				5					10					15	
Phe	Ser	Pro	Ser	Ser	Met	Cys	Ser	Pro	Val	Pro	Ser	Pro	Ser	Ser	Trp
			20					25					30		
Val	Asn	Phe	Ser	His	Leu	Glu	Gly	Asn	Leu	Ser	Asp	Pro	Cys	Ile	Arg
		35					40					45			
Asn	Arg	Thr	Glu	Leu	Gly	Gly	Ser	Asp	Ser	Leu	Cys	Pro	Pro	Thr	Gly
	50					55					60				
Ser	Pro	Ser	Met	Val	Thr	Ala	Ile	Thr	Ile	Met	Ala	Leu	Tyr	Ser	Ile
65					70					75					80
Val	Cys	Val	Val	Gly	Leu	Phe	Gly	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile
				85					90					95	
Val	Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn
			100					105					110		
Leu	Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	Gln	Ser
		115					120					125			
Val	Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys
	130					135					140				
Ile	Val	Ile	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr
145					150					155					160
Leu	Cys	Thr	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val
			165						170					175	
Lys	Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Ile	Asn	Val
		180						185					190		
Cys	Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met
		195					200					205			
Ala	Thr	Thr	Lys	Tyr	Arg	Asn	Gly	Ser	Ile	Asp	Cys	Ala	Leu	Thr	Phe
	210					215				220					
Ser	His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	Val	Phe
225					230					235					240
Ile	Phe	Ala	Phe	Ile	Met	Pro	Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly
			245						250					255	
Leu	Met	Ile	Leu	Arg	Leu	Lys	Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys
		260						265					270		
Glu	Lys	Asp	Arg	Asn	Leu	Arg	Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val
		275					280					285			
Val	Ala	Val	Phe	Ile	Val	Cys	Trp	Thr	Pro	Ile	His	Ile	Tyr	Val	Ile
	290					295					300				
Ile	Lys	Ala	Leu	Ile	Thr	Ile	Pro	Glu	Thr	Thr	Phe	Gln	Thr	Val	Ser
305					310					315					320

Trp	His	Phe	Cys	Ile	Ala	Leu	Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro
				325					330					335	
Val	Tyr	Ala	Phe	Leu	Asp	Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe
			340					345					350		
Cys	Ile	Pro	Thr	Ser	Ser	Thr	Ile	Glu	Gln	Gln	Asn	Ser	Ala	Arg	Ile
		355					360					365			
Arg	Gln	Asn	Thr	Arg	Asp	His	Pro	Ser	Thr	Ala	Asn	Thr	Val	Asp	Arg
	370					375					380				
Thr	Asn	His	Gln	Leu	Glu	Asn	Leu	Glu	Ala	Glu	Thr	Ala	Pro	Leu	Pro
385					390					395					400

<210> 87  
 <211> 383  
 <212> PRT  
 <213> Homo sapiens

<400> 87

Met	Glu	Thr	Ser	Gly	Asn	Ile	Ser	Asp	Phe	Leu	Tyr	Pro	Leu	Ser	Asn
1				5					10					15	
Pro	Val	Met	Ser	Asn	Ser	Ser	Val	Leu	Cys	Arg	Asn	Phe	Ser	Asn	Ser
			20					25					30		
Thr	Ser	Phe	Leu	Asn	Met	Asn	Gly	Ser	Ser	Arg	Asp	Ser	Thr	Asp	Glu
		35					40					45			
Gln	Asp	Lys	Thr	Pro	Val	Ile	Ile	Ala	Ile	Ile	Ile	Thr	Thr	Leu	Tyr
	50					55					60				
Ser	Ile	Val	Cys	Val	Val	Gly	Leu	Val	Gly	Asn	Val	Leu	Val	Met	Tyr
65					70					75				80	
Val	Ile	Ile	Arg	Tyr	Thr	Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile
			85						90					95	
Phe	Asn	Leu	Ala	Leu	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe
			100					105					110		
Gln	Ser	Val	Asn	Tyr	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Asp	Val	Val
		115					120					125			
Cys	Lys	Ile	Val	Met	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile
	130					135					140				
Phe	Thr	Leu	Thr	Thr	Met	Ser	Ile	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His
145					150					155				160	
Pro	Val	Lys	Ala	Leu	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val
			165						170					175	
Asn	Val	Cys	Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met
			180					185					190		
Val	Met	Ala	Ser	Thr	Thr	Ile	Glu	Asn	Gln	Asn	Ser	Pro	Leu	Gln	Val
	195						200					205			
Ser	Asn	Phe	Asp	Cys	Thr	Leu	Leu	Phe	Pro	His	Pro	Pro	Trp	Tyr	Trp
	210					215					220				
Glu	Thr	Leu	Leu	Lys	Ile	Cys	Val	Phe	Ile	Leu	Ala	Phe	Ile	Met	Pro
225					230					235				240	
Val	Leu	Ile	Ile	Thr	Val	Cys	Tyr	Gly	Leu	Met	Ile	Leu	Arg	Leu	Lys
			245						250					255	
Ser	Val	Arg	Met	Leu	Ser	Gly	Ser	Lys	Glu	Lys	Asp	Arg	Asn	Leu	Arg
		260						265					270		
Arg	Ile	Thr	Arg	Met	Val	Leu	Val	Val	Val	Ala	Val	Phe	Ile	Ile	Cys
	275						280					285			
Trp	Thr	Pro	Ile	His	Ile	Glu	Val	Ile	Ile	Lys	Ala	Leu	Val	Thr	Ile
	290					295				300					
Pro	Asn	Ser	Leu	Phe	Gln	Thr	Val	Thr	Trp	His	Phe	Cys	Ile	Ala	Leu
305					310					315					320

Gly	Tyr	Thr	Asn	Ser	Cys	Leu	Asn	Pro	Val	Leu	Tyr	Ala	Phe	Leu	Asp
				325					330					335	
Glu	Asn	Phe	Lys	Arg	Cys	Phe	Arg	Glu	Phe	Cys	Val	Pro	Ser	Pro	Ser
			340					345					350		
Val	Leu	Asp	Leu	Gln	Asn	Ser	Thr	Arg	Asn	Ser	Asn	Pro	Gln	Cys	Glu
		355					360					365			
Gly	Gln	Ser	Ser	Gly	His	Lys	Val	Asp	Arg	Asn	Asn	Arg	Gln	Val	
	370					375					380				